WHAT IS CLAIMED IS:

1. A test apparatus for use in optimizing performance of a system for optimizing a location-based service (LBS) by adjusting a maximum antenna range (MAR), the test apparatus comprising:

a key input part for inputting data to set the test apparatus to a conventional-GPS (C-GPS) operation mode or an assisted-GPS (A-GPS) operation mode;

a GPS antenna for receiving a first GPS signal and a second GPS signal transmitted from at least one GPS satellite;

a C-GPS receiver for extracting a first navigation data from the first GPS signal and generating a C-GPS geolocation information by using the first navigation data;

a A-GPS receiver for extracting a second navigation data from the second GPS signal and generating an A-GPS data by using the second navigation data; and

an embedded board having a CPU for setting the test apparatus to the C-GPS operation mode or the A-GPS operation mode according to a mode key received from the key input part, controlling the C-GPS receiver to generate the C-GPS geolocation information in the C-GPS operation mode and controlling the A-GPS receiver to generate the A-GPS data in the A-GPS operation mode.

2. The test apparatus according to claim 1, wherein the test apparatus further comprises a switch for switching on and off to have the GPS antenna to be connected alternately to the C-GPS receiver and the A-GPS receiver under the control of the CPU.

3. The test apparatus according to claim 1, wherein the test apparatus further comprises an RS-232C(Recommended Standard-232 Revision C) card which functions as a data interface between the A-GPS receiver and the embedded board.

4. The test apparatus according to claim 1, wherein the key input part includes at least one mode setting key button for setting or switching operation modes of the test apparatus to the C-GPS operation mode or the A-GPS operation mode.

5. The test apparatus according to claim 1, wherein the test apparatus further comprises a program memory for storing a GPS measurement program for setting or switching operation modes of the test apparatus to the C-GPS operation mode or the A-GPS operation mode.

6. The test apparatus according to claim 5, wherein the GPS measurement program provides a log file generation function for storing the number of GPS data measurements, measurement

time, coordinates of measurement points and measurement results as log files and a user interface function for displaying operation menu for setting or changing the operation mode and the measurement results.

7. The test apparatus according to claim 1, wherein the test apparatus further comprises a mode status storage unit for managing operation modes by assigning a unique flag to a waiting mode, the C-GPS operation mode and the A-GPS operation mode.

8. The test apparatus according to claim 1, wherein the test apparatus further comprises a LED(Light Emitting Diode) on/off part for indicating whether the test apparatus is in operation or not, there is an error or not and the first signal or the second signal is received or not.

9. The test apparatus according to claim 1, wherein the test apparatus further comprises a battery for providing electric power for driving the test apparatus.

10. The test apparatus according to claim 1, wherein the embedded board includes:

a UART(Universal Asynchronous Receiver/Transmitter) chip for receiving/transmitting data from/to an internal

communication device of the test apparatus;

a RAM for temporarily storing the C-GPS geolocation information and the A-GPS data; and

a communication interface for receiving/transmitting data from/to a communication device through a USB port or a serial port.

11. The test apparatus according to claim 1, wherein the test apparatus receives the first GPS signal and extracts the first navigation data from the first GPS signal in the C-GPS operation mode.

12. The test apparatus according to claim 1, wherein the test apparatus receives the second GPS signal and extracts the second navigation data from the second GPS signal in the A-GPS operation mode.

13. The test apparatus according to claim 1, wherein the C-GPS geolocation information includes latitudes, longitudes and number of at least one GPS satellite transmitting the first GPS signal.

14. The test apparatus according to claim 1, wherein the A-GPS data includes identification codes and number of at least one GPS satellite transmitting the second GPS signal,

measurement time and strength of the second GPS signal signals, pseudorange, network ID and base station ID.

15. A test apparatus for use in optimizing performance of a system for optimizing a location-based service (LBS) by adjusting a maximum antenna range (MAR), the test apparatus comprising:

a key input part for inputting data to set the test apparatus to a conventional-GPS (C-GPS) operation mode or an assisted-GPS (A-GPS) operation mode;

a GPS antenna for receiving a first GPS signal and a second GPS signal transmitted from at least one GPS satellite;

a C-GPS receiver for extracting a first navigation data from the first GPS signal and generating a C-GPS geolocation information by using the first navigation data;

a A-GPS receiver for extracting a second navigation data from the second GPS signal and generating an A-GPS data by using the second navigation data;

an embedded board having a CPU for setting the test apparatus to the C-GPS operation mode or the A-GPS operation mode according to a mode key received from the key input part, controlling the C-GPS receiver to generate the C-GPS geolocation information in the C-GPS operation mode and controlling the A-GPS receiver to generate the A-GPS data in the A-GPS operation mode; and

a memory for storing the C-GPS geolocation information and the A-GPS data under the control of the CPU.

16. The test apparatus according to claim 15, wherein the memory is a nonvolatile memory.

17. The test apparatus according to claim 16, wherein the memory includes a flash memory card.

18. The test apparatus according to claim 17, wherein the flash memory card is at least one of a PCMCIA(Personal Computer Memory Card International Association) card, a compact flash card, a smart media card, a multimedia card and a secure digital card.

19. The test apparatus according to claim 15, wherein the embedded board includes:

a UART(Universal Asynchronous Receiver/Transmitter) chip for receiving/transmitting data from/to an internal communication device of the test apparatus;

a RAM for temporarily storing the C-GPS geolocation information and the A-GPS data; and

a communication interface for receiving/transmitting data from/to a communication device through a USB port or a serial port.

20. The test apparatus according to claim 15 or claim 19, wherein the CPU stores the C-GPS geolocation information and the A-GPS data in the memory if the test apparatus fails to transmit in real-time the C-GPS geolocation information and the A-GPS data which are temporarily stored in the RAM.

21. The test apparatus according to claim 15, wherein the test apparatus receives the first GPS signal and extracts the first navigation data from the first GPS signal in the C-GPS operation mode.

22. The test apparatus according to claim 15, wherein the test apparatus receives the second GPS signal and extracts the second navigation data from the second GPS signal in the A-GPS operation mode.

23. The test apparatus according to claim 15, wherein the C-GPS geolocation information includes latitudes, longitudes and number of at least one GPS satellite transmitting the first GPS signal.

24. The test apparatus according to claim 15, wherein the A-GPS data includes identification codes and number of at least one GPS satellite transmitting the second GPS signal,

measurement time and strength of the second GPS signal signals, pseudorange, network ID and base station ID.

25. A test apparatus for use in optimizing performance of a system for optimizing a location-based service (LBS) by adjusting a maximum antenna range (MAR), the test apparatus comprising:

a key input part for inputting data to set the test apparatus to a conventional-GPS (C-GPS) operation mode or an assisted-GPS (A-GPS) operation mode;

a GPS antenna for receiving a first GPS signal and a second GPS signal transmitted from at least one GPS satellite;

a C-GPS receiver for extracting a first navigation data from the first GPS signal and generating a C-GPS geolocation information by using the first navigation data;

a A-GPS receiver for extracting a second navigation data from the second GPS signal and generating an A-GPS data by using the second navigation data;

an embedded board having a CPU for setting the test apparatus to the C-GPS operation mode or the A-GPS operation mode according to a mode key received from the key input part, controlling the C-GPS receiver to generate the C-GPS geolocation information in the C-GPS operation mode and controlling the A-GPS receiver to generate the A-GPS data in the A-GPS operation mode;

a memory for storing the C-GPS geolocation information and the A-GPS data under the control of the CPU;

a wireless modem for modulating the C-GPS geolocation information and the A-GPS data, generating and transmitting a MAR optimizing data signal; and

a RF(Radio Frequency) antenna for receiving the MAR optimizing data signal and radiating the MAR optimizing data signal to radio space.

26. The test apparatus according to claim 25, wherein the embedded board includes:

a UART(Universal Asynchronous Receiver/Transmitter) chip for receiving/transmitting data from/to an internal communication device of the test apparatus;

a RAM for temporarily storing the C-GPS geolocation information and the A-GPS data; and

a communication interface for receiving/transmitting data from/to a communication device through a USB port or a serial port.

27. The test apparatus according to claim 25 or claim 26, wherein the wireless modem receives the C-GPS geolocation information and the A-GPS data via the UART chip.

28. The test apparatus according to claim 25, wherein the

CPU stores the C-GPS geolocation information and the A-GPS data in the memory if the test apparatus fails to transmit in real-time the C-GPS geolocation information and the A-GPS data which are temporarily stored in the RAM.

29. The test apparatus according to claim 25, wherein the test apparatus receives the first GPS signal and extracts the first navigation data from the first GPS signal in the C-GPS operation mode.

30. The test apparatus according to claim 25, wherein the test apparatus receives the second GPS signal and extracts the second navigation data from the second GPS signal in the A-GPS operation mode.

31. The test apparatus according to claim 25, wherein the C-GPS geolocation information includes latitudes, longitudes and number of at least one GPS satellite transmitting the first GPS signal.

32. The test apparatus according to claim 25, wherein the A-GPS data includes identification codes and number of at least one GPS satellite transmitting the second GPS signal, measurement time and strength of the second GPS signal signals, pseudorange, network ID and base station ID.

33. A method for controlling a test apparatus with a view to optimizing a location-based service (LBS) by adjusting a maximum antenna range (MAR), the method comprising the steps of:

(a) setting the test apparatus to an assisted-GPS (A-GPS) operation mode at each measurement point and transmitting a identification code of a wireless base station which covers or is adjacent to the measurement point;

(b) searching and receiving a GPS signal by receiving and analyzing an assistance data through mobile communication networks;

(c) generating and storing an A-GPS data, and switching the test apparatus into a conventional-GPS (C-GPS) operation mode;

(d) searching and receiving a GPS signal; and

(e) generating a C-GPS geolocation information and gathering and transmitting the C-GPS geolocation information and the A-GPS data to a position determination entity through the mobile communication networks.

34. The method according to claim 33, wherein at step (a) or step (c), the A-GPS operation mode or the C-GPS operation mode is set by operating at least one mode setting key button included in the test apparatus.

35. The method according to claim 33, wherein at step (a) or step (c), the A-GPS operation mode or the C-GPS operation mode is set by using a GPS measurement program installed in the test apparatus.

36. The method according to claim 33, wherein at step (b), the test apparatus searches the GPS signal by using at least one GPS satellite location coordinate information included in the assistance data.

37. The method according to claim 33, wherein at step (e), the test apparatus temporarily stores the C-GPS geolocation information and the A-GPS data in an embedded memory and retransmits after a prescribed time interval if the test apparatus fails to transmit in real-time the C-GPS geolocation information and the A-GPS data.

38. The method according to claim 37, wherein the C-GPS geolocation information and the A-GPS data stored in the memory are copied or stored in another storing device by using a cable connected to the test apparatus.

39. The method according to claim 33, wherein the test apparatus starts operation in the C-GPS operation mode and then

is switched to the A-GPS operation mode.